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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,990	06/26/2003	Mi-Sook Nam	053785-5120	3882

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EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/603,990	Applicant(s) NAM ET AL.	
	Examiner Tarifur R. Chowdhury	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 10,11 and 19-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9,12-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. **Claims 1-8 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al. (US. Patent No. 6,281,952, hereinafter "Okamoto") in view of Zhang et al. (US. Patent No. 6,396,470, hereinafter "Zhang"), and in further view of Kobashi (US. Patent No. 6,839,107).**

4. Regarding 1-3 and 12-13, Okamoto discloses a transfective liquid crystal display (LCD) method and device (fig. 4, ref. 200) comprising a substrate (fig. 24, ref. 29) having a reflective portion (fig. 24, ref. 9) and a transmissive portion (fig.

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24, ref. 10), a gate line (fig. 23a, ref. 23) on the substrate, a data line (fig. 23a, ref. 24) crossing the gate line and defining a pixel region (fig. 23a, ref. 20), a thin film transistor (TFT) (fig. 23a, ref. 21) connected to the gate line and the data line, a first organic material layer (fig. 24, ref. 25) made of photoacrylic resin (col. 81, lines 34-35) in the pixel region having a plurality of uneven patterns at the reflective portion, and a reflective layer (fig. 24, ref. 19) on the organic material layer having a transmissive hole at the open portion.

However, the reference fails to specifically disclose a second organic material layer on the first organic material layer having an open portion at the transmissive portion as well as a plurality of uneven patterns alternating with uncovered portions of the substrate within the reflective portion excluding a peripheral portion of the pixel region.

Zhang discloses an LCD device having a second organic material layer (fig. 20, ref. 181) on the first organic material layer (fig. 20, ref. 1061c) having an open portion at the transmissive portion.

Kobashi discloses an LCD device having a plurality of uneven patterns alternating with uncovered portions of the substrate (substrate portions fig 5, ref. 10 under reflective portions fig. 5, ref. 8c) within the reflective portion (fig. 5, ref. 8a) excluding a peripheral portion of the pixel region (fig. 5, ref. 100a).

It would have been obvious to one of ordinary skill in the art at the time the

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invention was made to have a second organic material layer on the first organic material layer having an open portion at the transmissive portion since one would be motivated to provide high speed operation (Zhang, col. 20, lines 53-54) and improve the incidence of light use efficiency (col. 22, lines 38-40). In fact, Okamoto discloses the method of forming the organic layers by means of providing a number of sub layers by a successive steps of pattern irradiating, developing, and curing to form a layer having an open portion at the transmissive portion (Okamoto, col. 81, lines 33-40) to show that Okamoto is not closed to the notion of additional organic layers. Furthermore, it would have been obvious to one of ordinary skill in the art to have a plurality of uneven patterns alternating with uncovered portions of the substrate within the reflective portion excluding a peripheral portion of the pixel region since one would be motivated to reduce the cost of manufacturing by having the reflector formed on uneven patterns as described above to also have a diffusion function (Kobashi, col. 2, lines 25-30).

5. As per claims 4-5 and 14-15, Okamoto discloses the LCD device as recited above having a silicon nitride layer (col. 80, lines 51-52) covering the gate line, the data line, and the TFT.

6. As to claims 6-8 and 16-17, Okamoto discloses the LCD device as recited above having a pixel electrode (fig. 24, ref. 20) on the reflective layer, a TFT comprising a gate electrode (fig. 24, ref. 23), an active layer (col. 80, lines 52-55), and source (fig. 24, ref. 28) and drain (fig. 24, ref. 22) electrodes, and a gate pad

connected to the gate line (fig. 24, ref. 26), a data pad connected to the data line (fig. 24, ref. 26) , and a capacitor electrode (fig. 24, ref. 27) overlapping the gate line.

4. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto, Zhang, and Kobashi, and in further view of Nishida et al. (US. Patent Pub. No. 2002/0159016, hereinafter "Nishida").

Okamoto, when modified by Zhang and Kobashi, discloses the LCD device as recited above, however, the reference fails to specifically disclose the second organic material having a drain contact hole exposing the drain electrode, a capacitor contact hole exposing the capacitor electrode, a gate pad contact hole exposing the gate pad, and a data pad contact hole exposing the data pad. Nishida discloses an LCD device with an organic material layer having a drain contact hole exposing the drain electrode, a capacitor contact hole exposing the capacitor electrode, a gate pad contact hole exposing the gate pad, and a data pad contact hole exposing the data pad (fig. 8, ref. 39b, 39a).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a drain contact hole exposing the drain electrode, a capacitor contact hole exposing the capacitor electrode, a gate pad contact hole exposing the gate pad, and a data pad contact hole exposing the data pad since one would be motivated to prevent the occurrence of vertical cross-talk without reducing the aperture ratio (pg. 2, [0027]).

Response to Arguments

5. Applicant's arguments filed August 29, 2005 have been fully considered but they are not persuasive.

Applicant present several arguments. First, Applicant argues that "partially covering" requires covered portions and uncovered portions while "fully covering" involved covered portions only and thus "fully covering" organic material cannot reasonably be construed as, "partially covering" the substrate since "fully covering" does not include uncovered portions. However, as applicant correctly pointed out that, "partially covered" is a subset of "fully covered" and thus "fully covered" also reads on the limitation of "partially covered". Further, applicant's argument such as, "partially covering" requires covered portions and uncovered portions is not relevant since the claim limitations does not recite that. Therefore, because the Okamoto reference discloses that the organic material layer (25) in the reflective portion (9) fully covers the substrate, it also, by definition, covers the substrate "partially."

Applicant also argues that Okamoto cannot be combined with Kobashi since they teach a different positions for the TFT. Applicant asserts that because Okamoto discloses a TFT formed "under" the reflective display section and that Kobashi teaches forming the uneven patterns from materials used in making TFTs and thus discloses a TFT formed "adjacent" to the reflective portion. However, Okamoto teaches a TFT that is formed "under" the reflective region, it

is clear that the TFT of Kobashi is also under irregular portions. The fact that Kobashi's irregular portions can be "easily" formed in the area in which the TFT is not formed" does not preclude the combination with Okamoto. Thus, Applicant's contention that the references are not combinable is unsubstantiated and not persuasive.

Applicant also argues that even if the Okamoto references were combinable, the uneven patterns of Kobashi are "formed by layers left during the formation of the TFT" contrasts "a plurality of even patterns consisting of a first organic material layer" that is recited in claims 1 and 12. First, it is unclear what Applicant's argument is. It appears that Applicant is suggesting that Kobashi's multiple layers is not the same as the claimed inventions first organic material layer. However, it is not certain how Applicant then concludes that Kobashi (and Okamoto) fail to teach or suggest the limitations of the claim. Second, even if Applicant's argument can be properly and logically understood, it is noted that there is nothing in Kobashi reference and nothing in the claims to preclude the multiple layers formed over the TFT of Kobashi is not inclusive of a first organic material layer. The claim merely recites a plurality of uneven patterns consisting of a first organic material layer within the reflective portion that partially covers the substrate. Kobashi clearly teaches a plurality of uneven patterns with uncovered portions of the substrate (substrate portions Fig. 5, ref. 10 under the reflective portions fig. 5, ref. 8c) within the reflective portion (fig. 5, ref. 8a) and

provides more than sufficient motivation to combine with Okamoto to reduce the cost of manufacturing by having the reflector formed on uneven patterns as described above to also have a diffusion function (Kobashi, col. 12, lines 25-30).

As, a result, applicant's arguments do not place the application in condition for allowance at this time and the rejections are maintained.

Conclusion

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

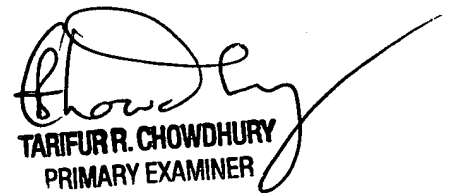
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TRC
May 30, 2006



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER